

DRAWINGS

FIG. 1

FIG. 2

FIG. 3

FIG. 4

WAFER COMMENCEMENT

SURFACE OXIDATION

PROCESS 2

PROCESS 3

PROCESS n

PROCESS n+1

FINAL PROCESS

30 THIN FILM DEPOSITION

31 RESIST COATING

32 EXPOSURE

33 DEVELOPING

34 ETCHING

35 RESIST STRIPPING

36 CLEANING

37, 38, 39 VISUAL CHECK

FIG. 1

FIG. 6

NORMAL

FAILURE RATE OVER 50%

CHIP A, CHIP B, CHIP C, CHIP D

(b)

TYPICAL BRIGHTNESS VALUE OF WINDOW PATTERNS

CHIP A, CHIP B, CHIP C, CHIP D

NORMAL

COORDINATES OF CHIPS

(c)

OCCURRENCE PROBABILITY

TYPICAL BRIGHTNESS VALUE

FIG. 7

SIGNAL AMOUNT

NORMAL LEVEL

CONTACT RESISTANCE

FIG. 8

NORMAL

FAILURE RATE BELOW 50%

FIG. 14

HIGH PATTERN DENSITY

COORDINATES WITHIN IMAGES

ETCHING TIME

BRIGHTNESS

128 OPERATOR.

133 FAILURE ANALYSIS SYSTEM

127 GENERAL CONTROL UNIT

131 PROCESS CONTROL SYSTEM

133 FAILURE ANALYSIS SYSTEM

134 CRITICAL DIMENSION MEASUREMENT SEM, FIB, ELECTRON-BEAM

INSPECTION APPARATUS, REVIEW SEM

EXTERNAL INTERFACE

IMAGE PROCESSING SYSTEM

FIG. 21

(a)

BRIGHTNESS OF PATTERN SECTIONS

LOT # (INSPECTING ORDER)

(b)

BRIGHTNESS OF PATTERN SECTIONS

TIME AND DATE OF COMMENCEMENT

(c)

BRIGHTNESS OF PATTERN SECTIONS

TIME AND DATE OF COMMENCEMENT

FIG. 1

FIG. 3

COMMENCEMENT OF PROCESSING A WAFER

PROCESS 2

PROCESS 3

PROCESS n

PROCESS n+1

FINAL PROCESS

30 THIN FILM DEPOSITION

31 RESIST COATING

32 EXPOSURE

33 DEVELOPING

34 ETCHING

35 RESIST STRIPPING

36 CLEANING

37, 38, 39 VISUAL INSPECTION

FAILURE RATE UNDER 50%

FAILURE RATE OVER 50%

FIG. 9

FIG. 10

FIG. 11

FIG. 12

(b)

BRIGHTNESS

COORDINATES IN THE IMAGES

(c)

FREQUENCY

BRIGHTNESS

FIG. 13

(b)

BRIGHTNESS

COORDINATES IN THE IMAGES

(c)

BRIGHTNESS

COORDINATES IN THE IMAGES

FIG. 14

2025 RELEASE UNDER E.O. 14176

(a)

LOW PATTERN DENSITY

HIGH PATTERN DENSITY

FIG. 15

(b)

BRIGHTNESS

COORDINATES IN THE IMAGES

FIG. 16

FIG. 17

BRIGHTNESS OF PATTEMS

ETCHING TIME

FIG. 18

FREQUENCY

BRIGHTNESS

FIG. 19

124 COLUMN CONTROLLER

125 STAGE CONTROLLER

126 IMAGE PROCESSING UNIT

127 GENERAL CONTROLLING UNIT

128 OPERATOR

FIG. 15

133 FAILURE ANALYSIS SYSTEM

127 GENERAL CONTROL UNIT

131 PROCESS CONTROL SYSTEM

134 CRITICAL DIMENSION MEASUREMENT SEM, FIB, ELECTRON-BEAM
INSPECTION APPARATUS, REVIEW SEM

136 IMAGE PROCESSING SYSTEM

(a)

LOT # (INSPECTING ORDER)

BRIGHTNESS OF PATTERN SECTIONS

(c)

TIME AND DATE OF COMMENCEMENT

FIG.1

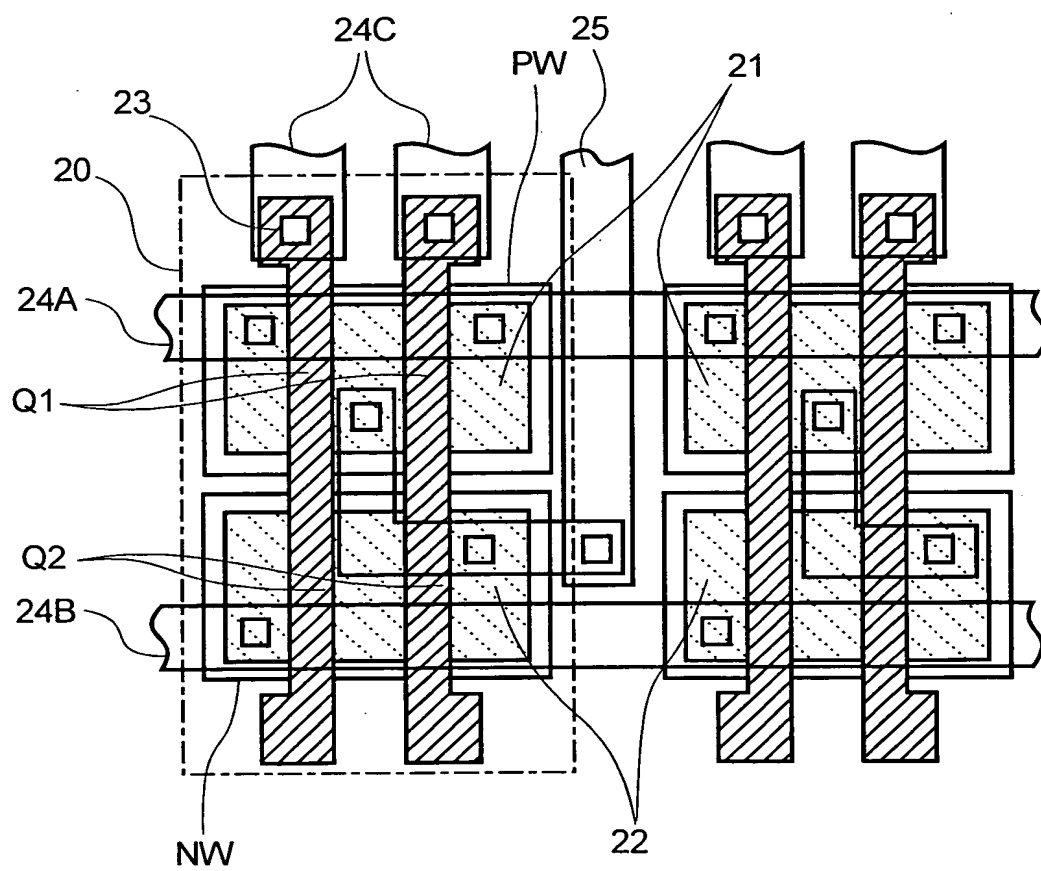


FIG.2

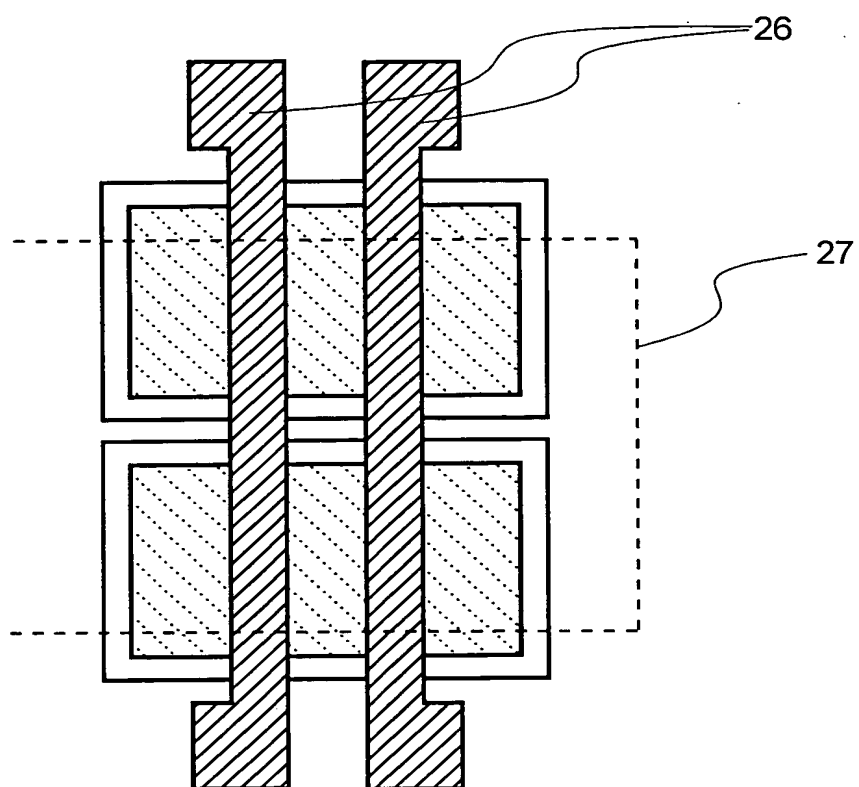


FIG.3

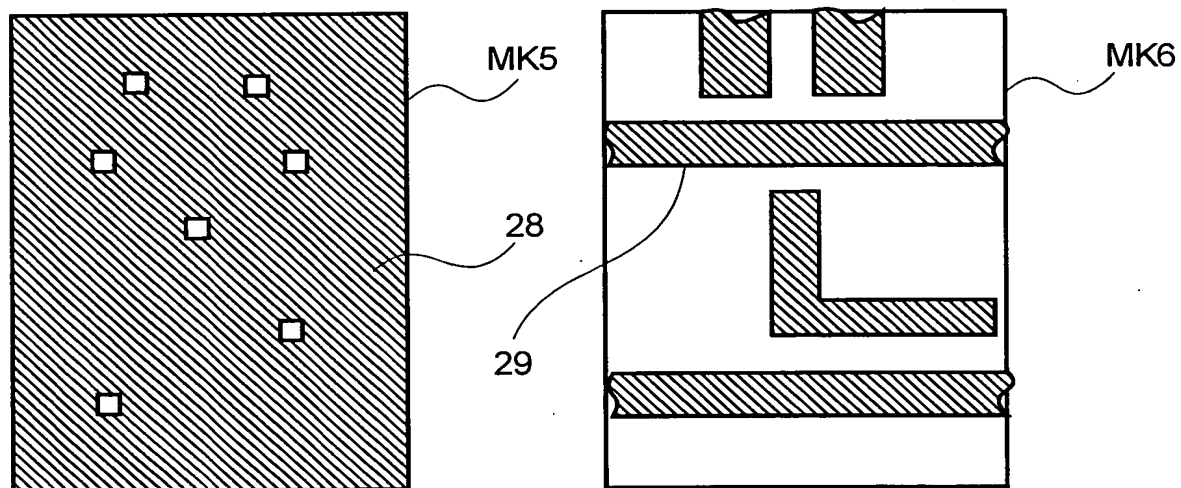


FIG.4

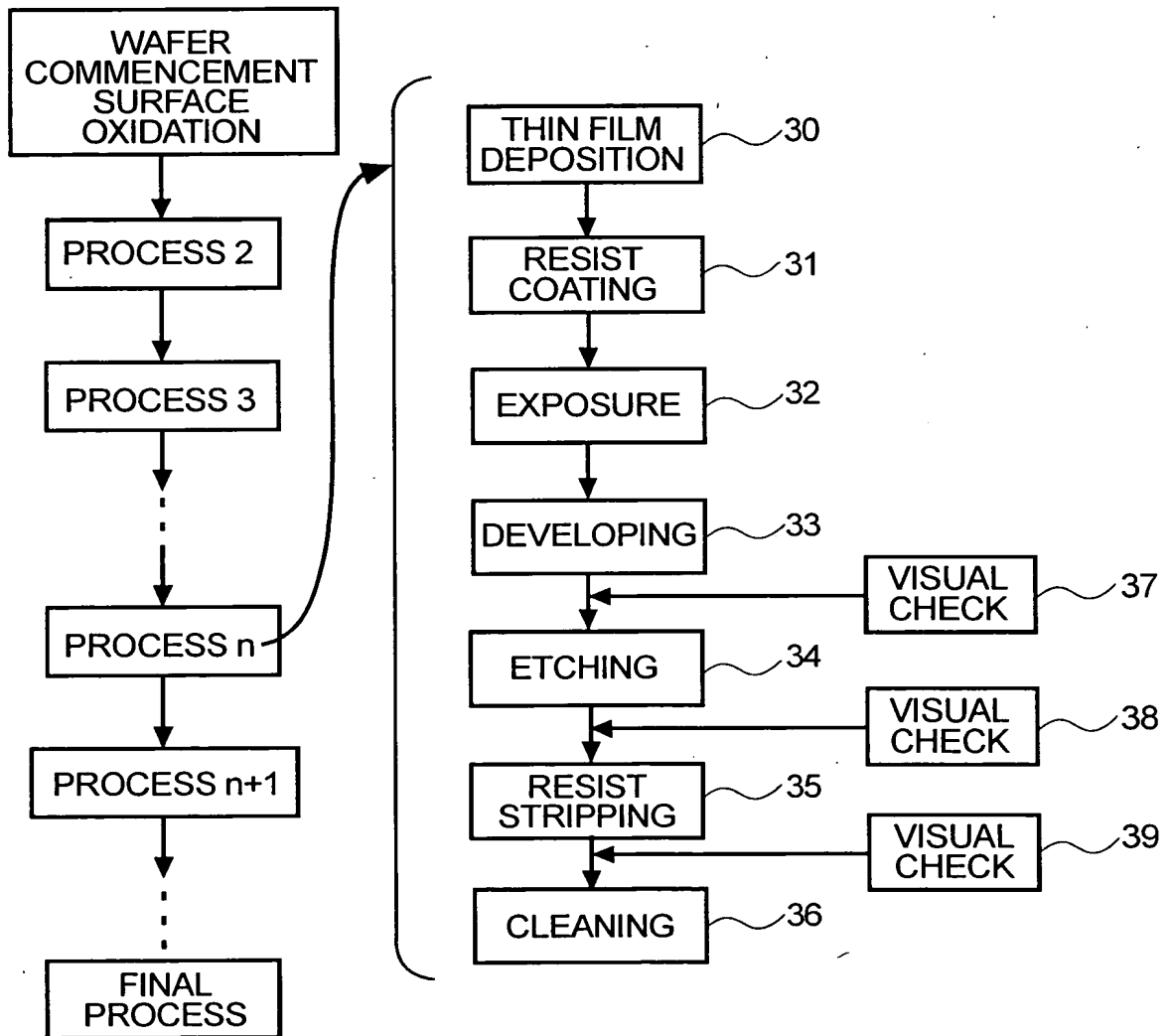


FIG.5

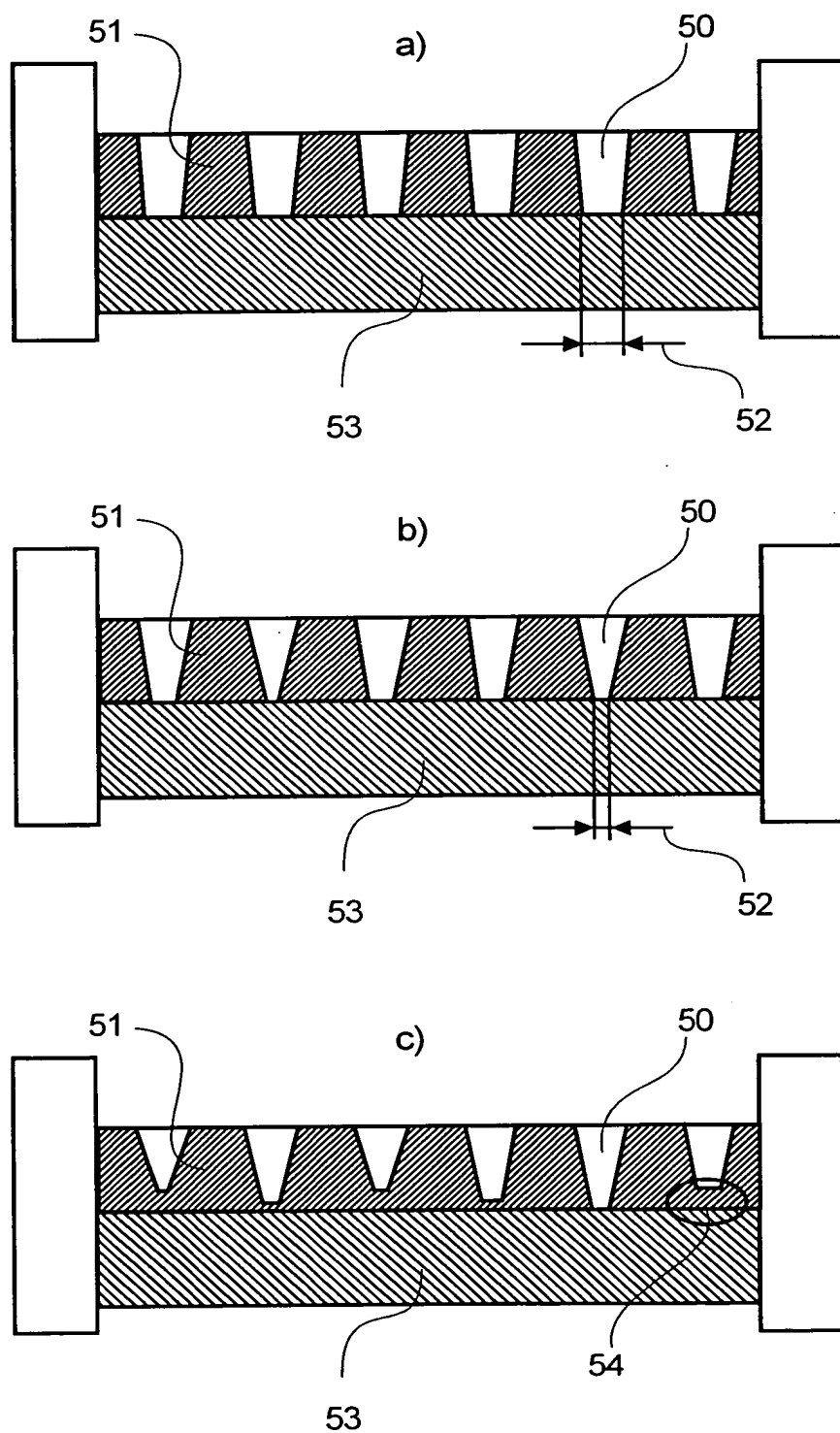


FIG.6

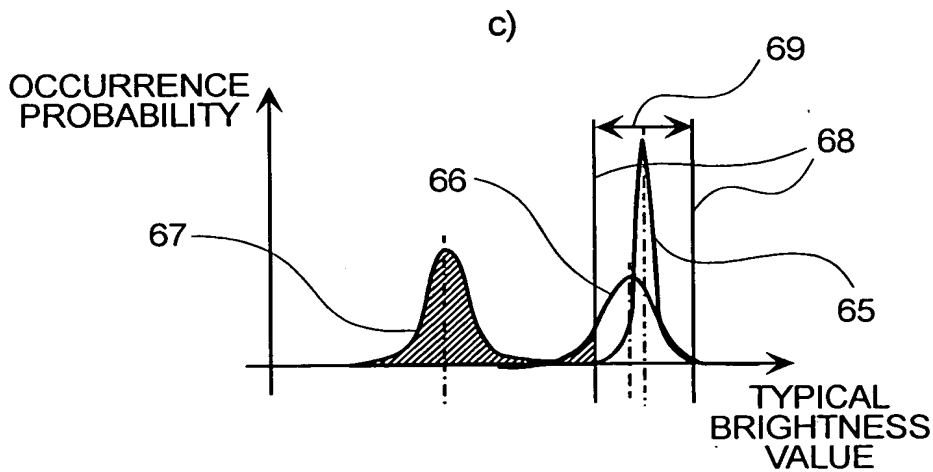
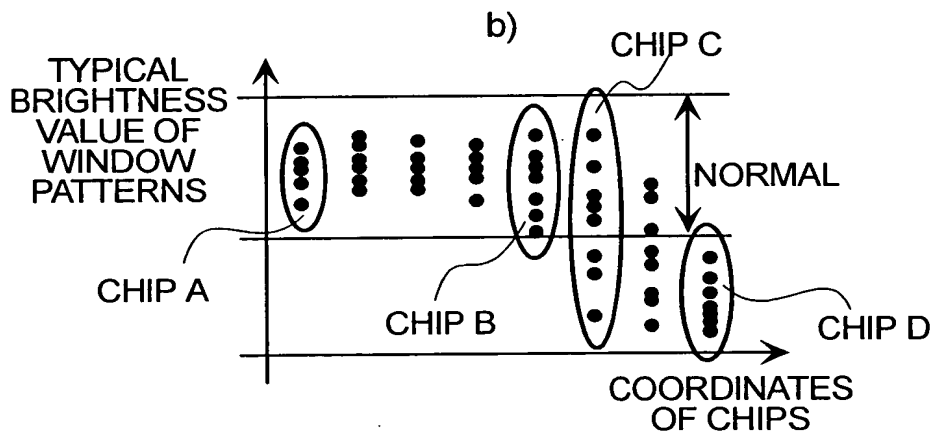
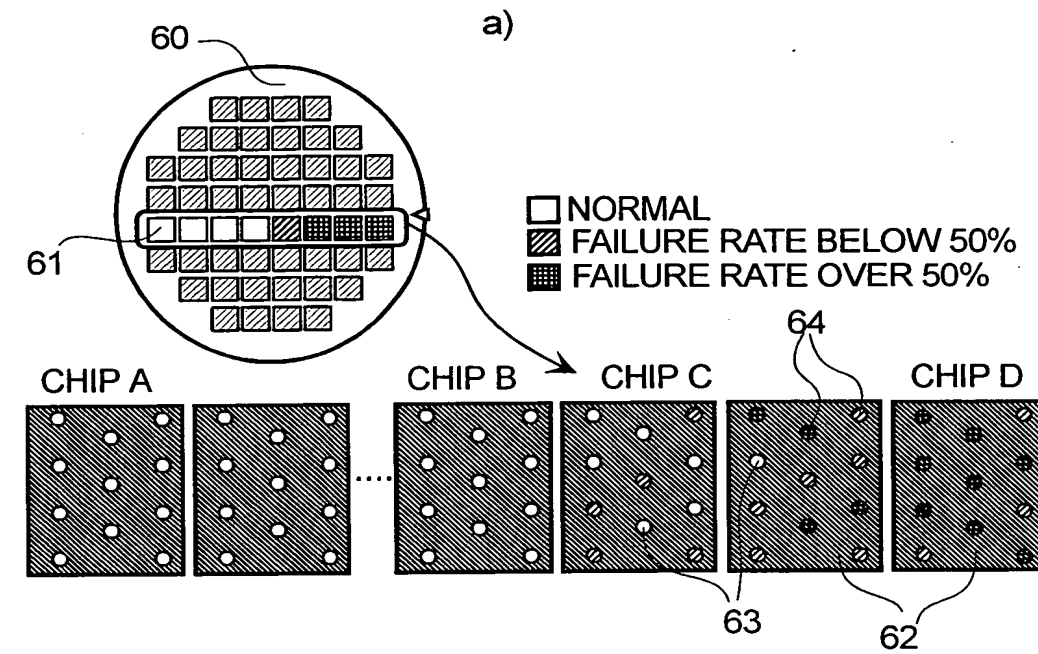


FIG.7

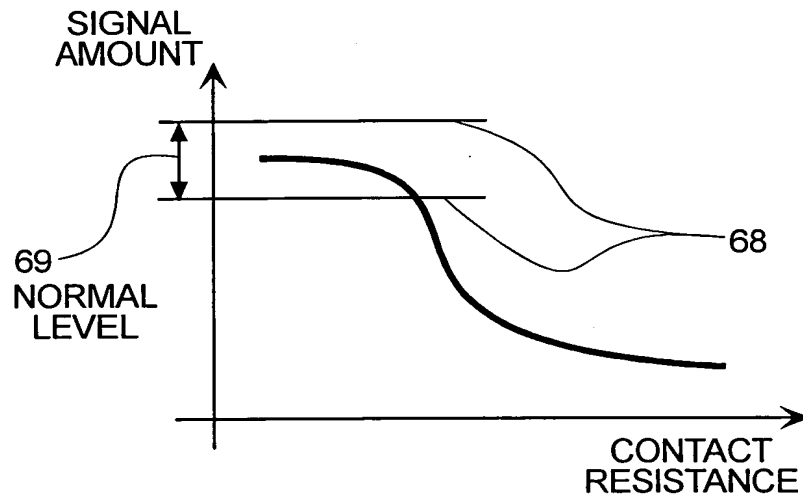
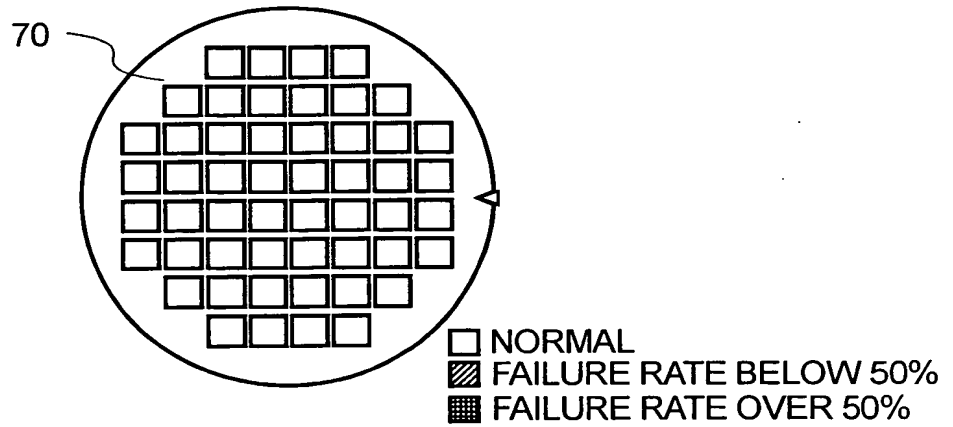


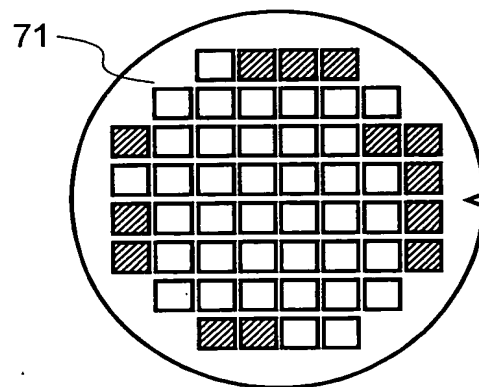
FIG. 7

FIG.8

a)



b)



c)

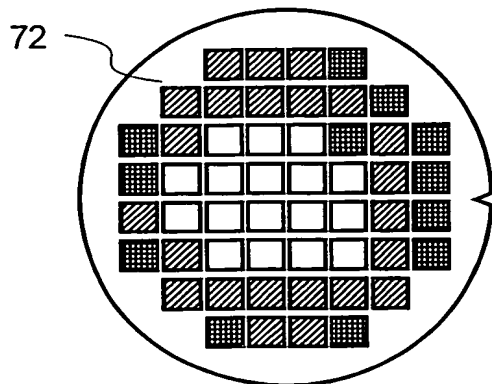


FIG.9

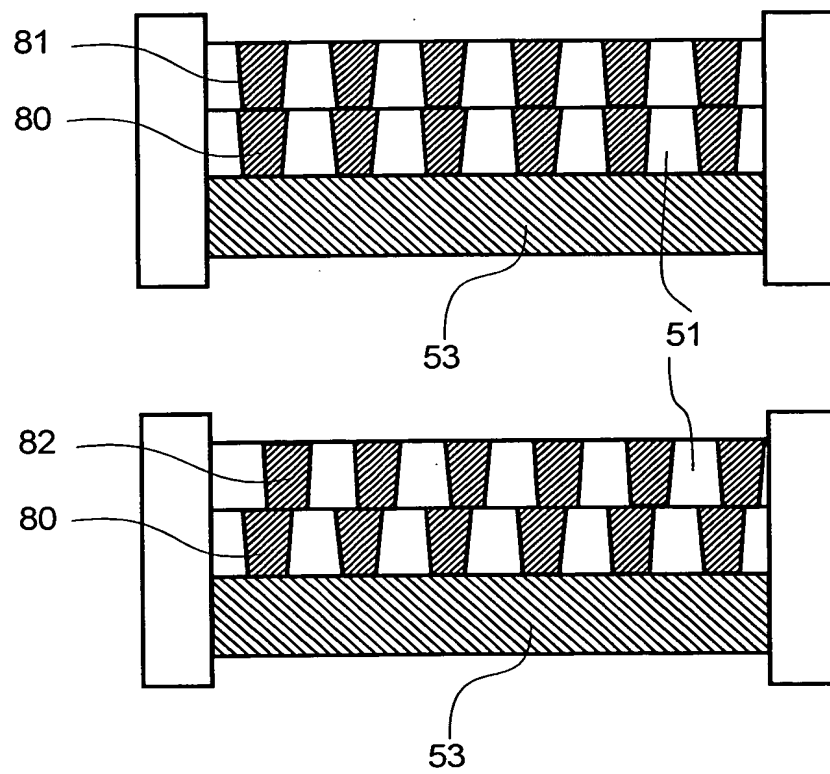


FIG.10

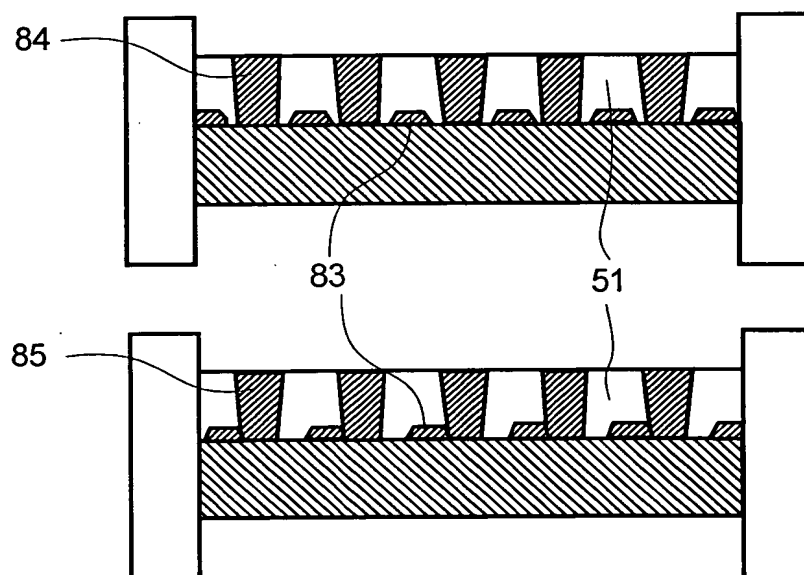


FIG.11

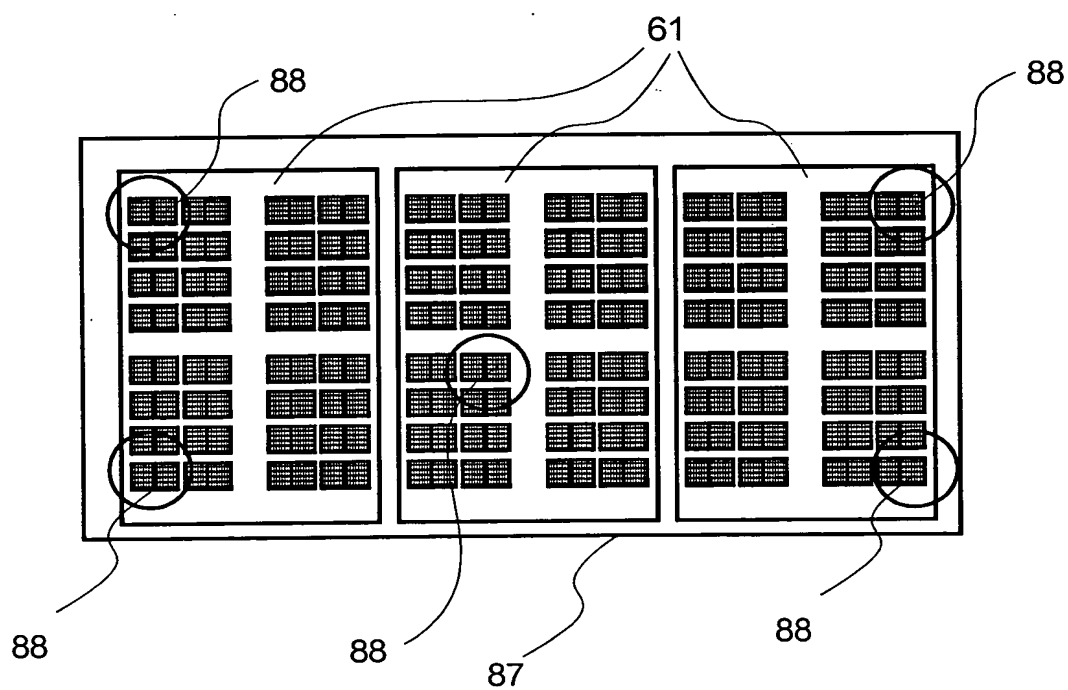
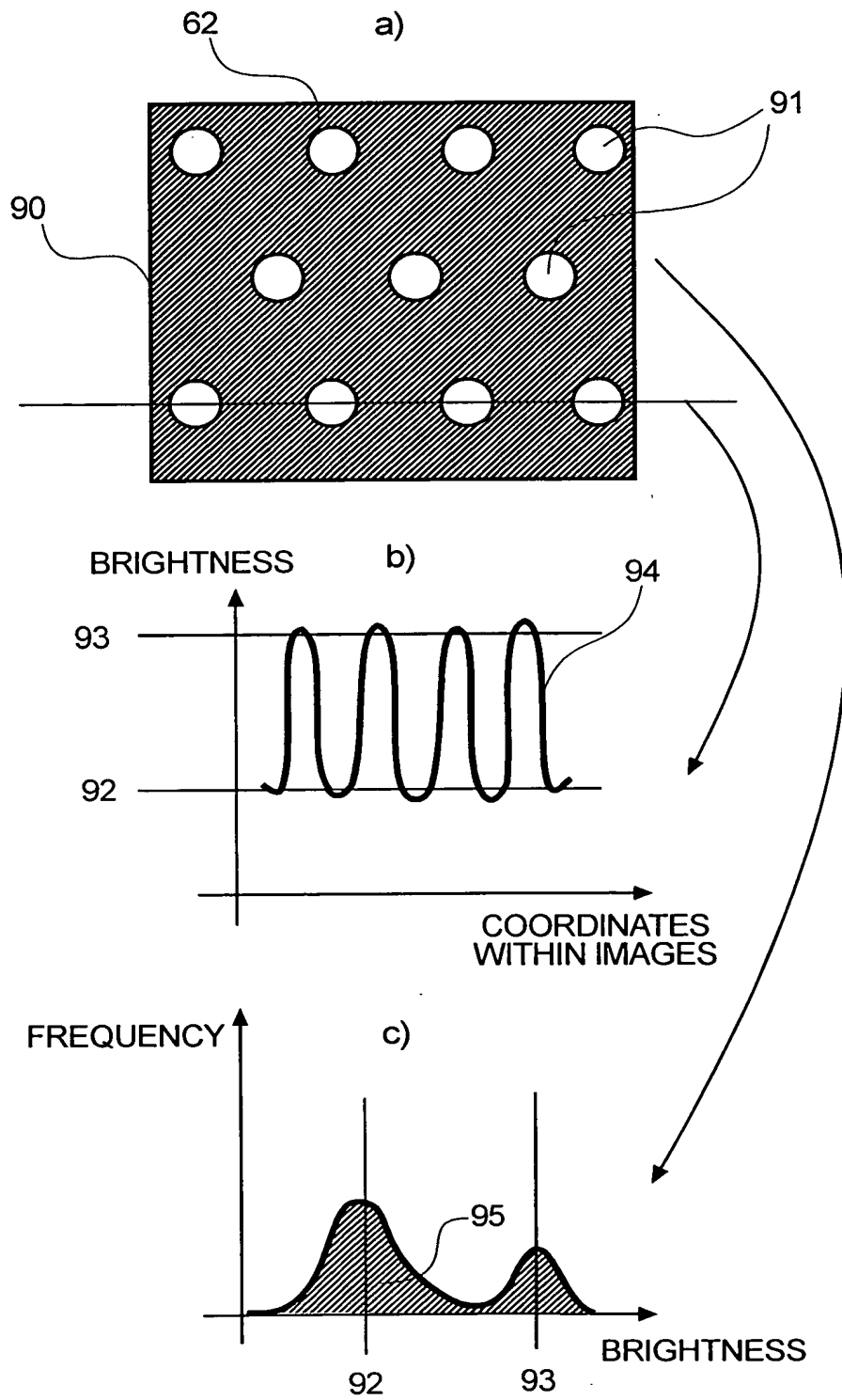


FIG.12



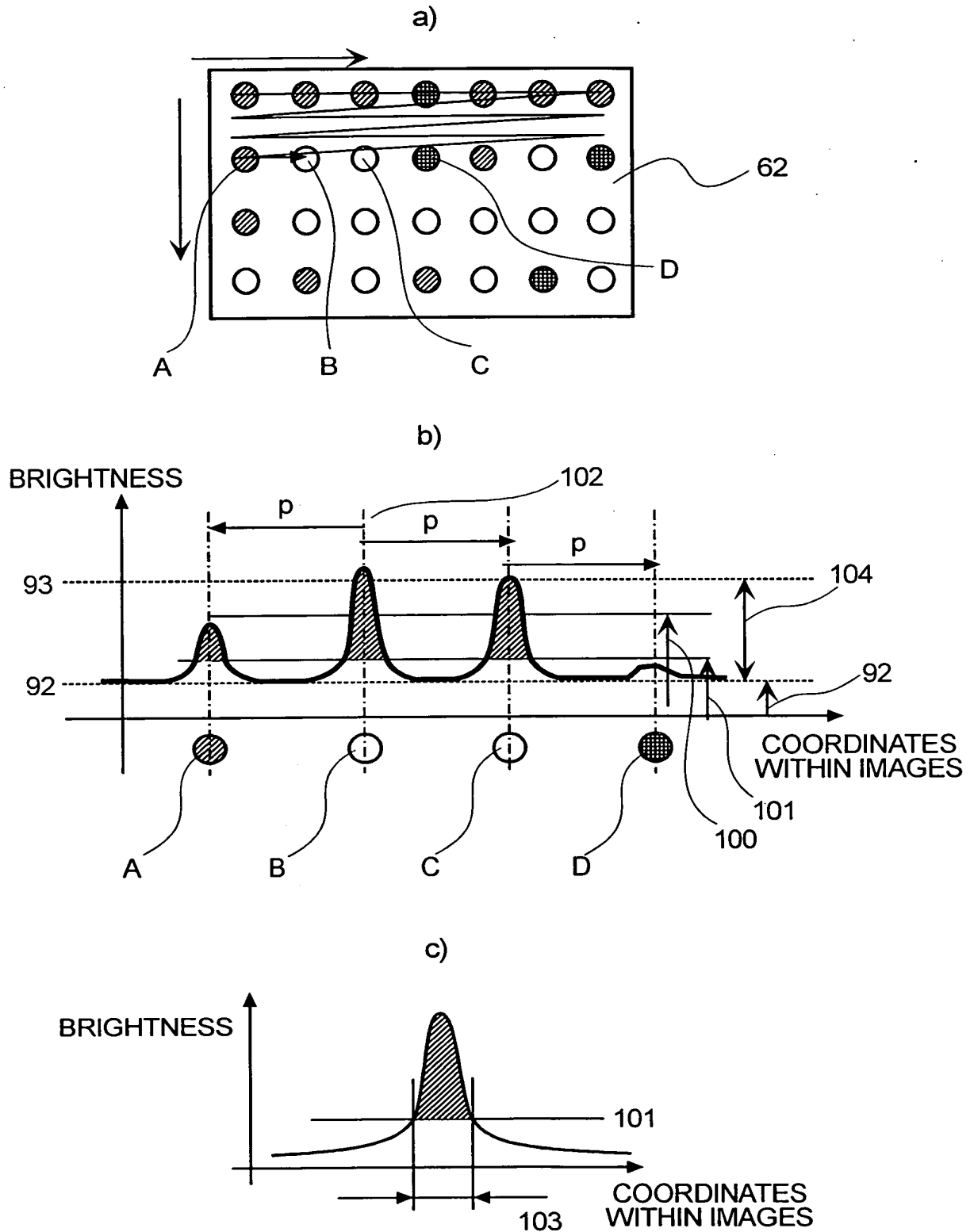
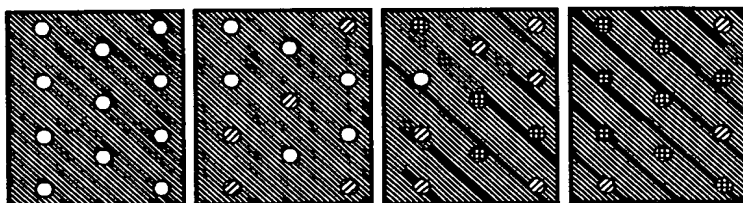
[illegible]

FIG.14

a) LOW PATTERN DENSITY



b) HIGH PATTERN DENSITY

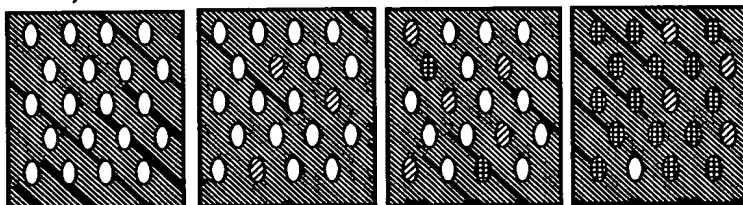


FIG.15

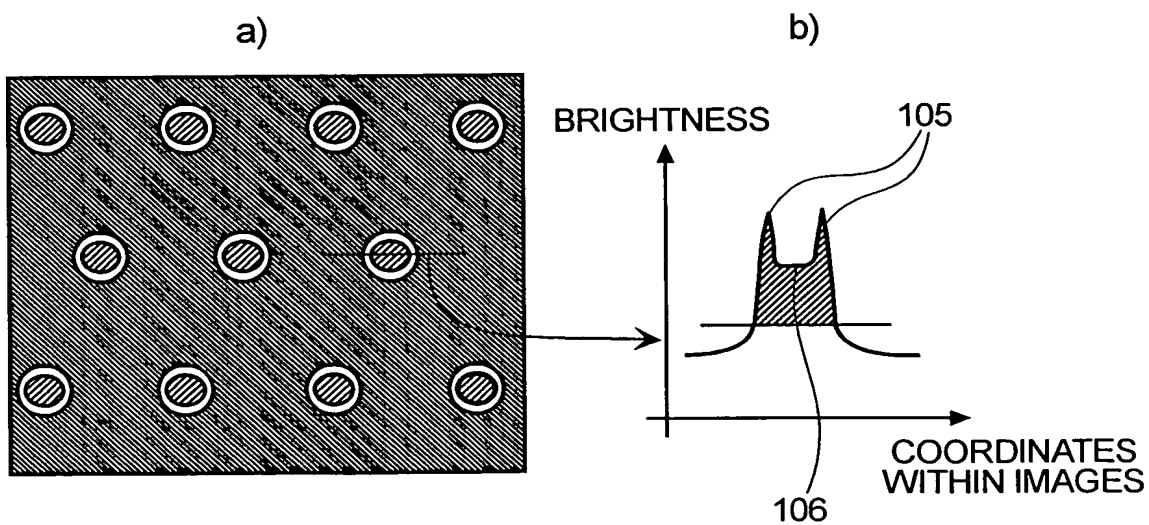


FIG.16

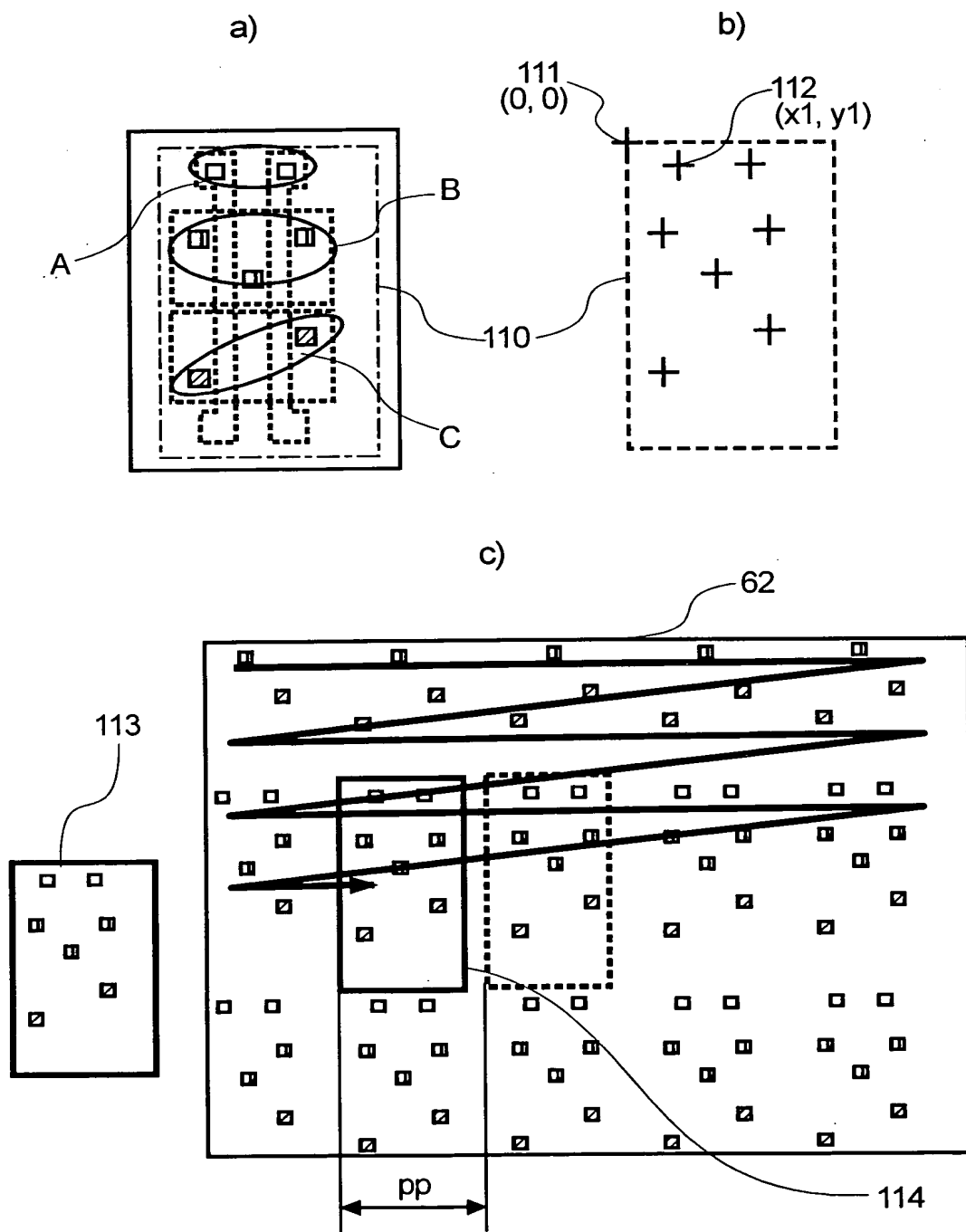


FIG.17

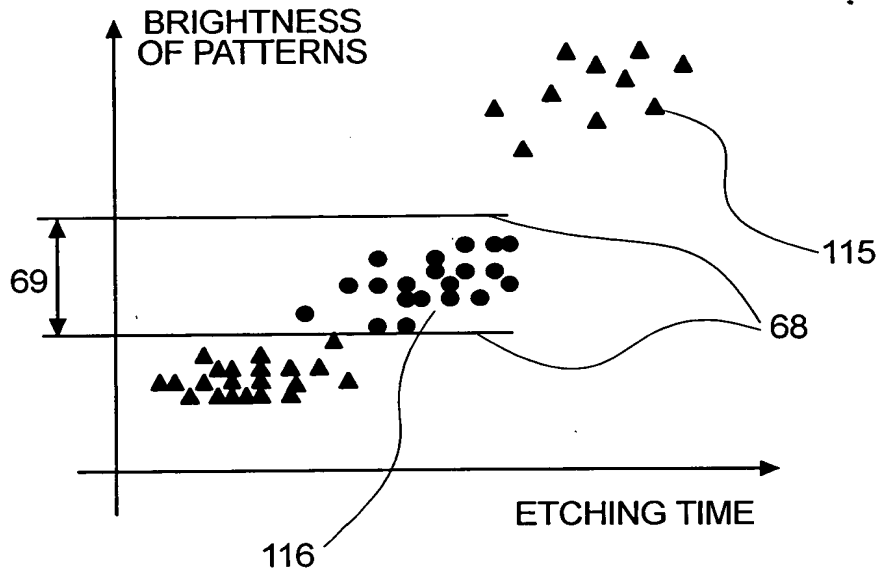


FIG.18

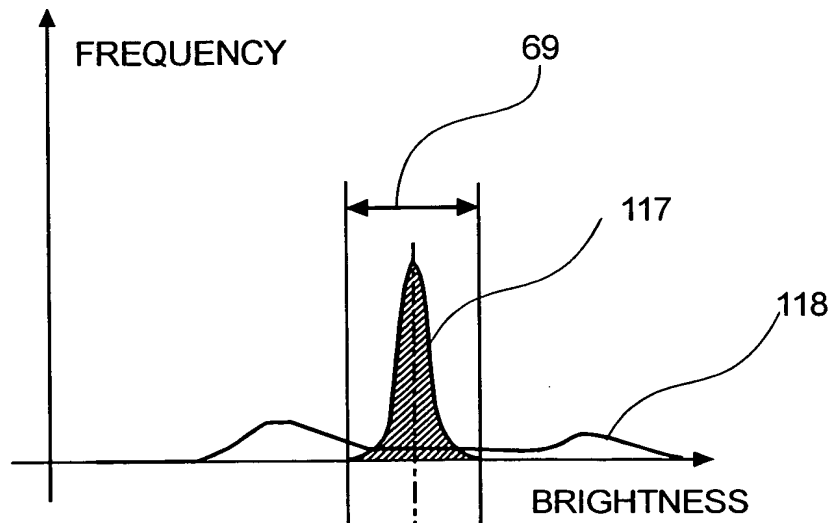


FIG.19

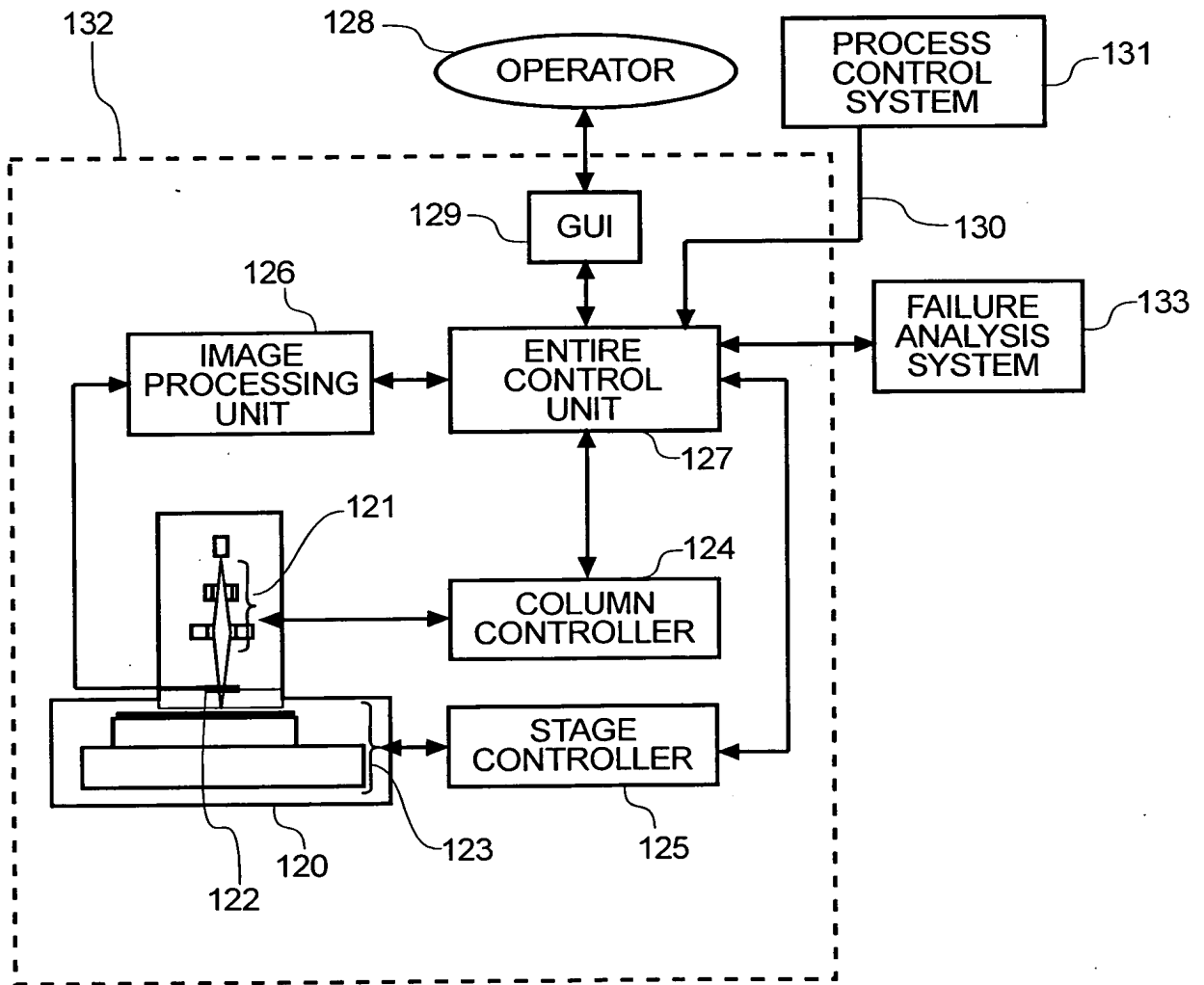


FIG.20

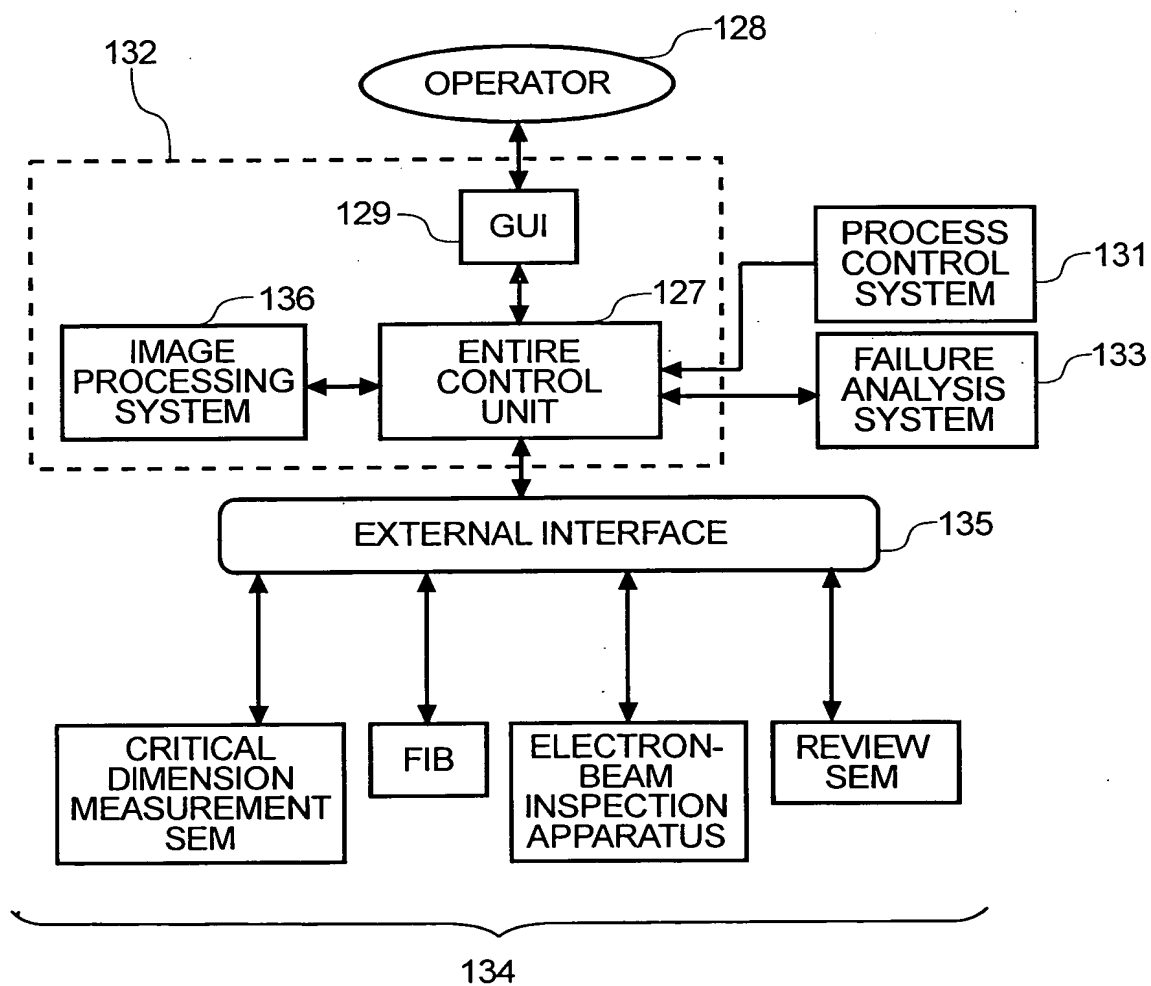


FIG.21

